

Reaction of Nitrogen Oxides With Polyfluorinated S/079/60/030/007/018/020
Ethylenes. Synthesis and Reduction of Poly- B001/B067 82300
fluorinated Nitroso Compounds

reaction the addition of N_2O_3 takes place in such a way that the nitroso
group is linked with the carbon atom which has a higher electron density.
There are 17 references: 4 Soviet and 4 German.

SUBMITTED: June 4, 1959

Card 3/3

Case 3/3

85613

S/079/60/030/007/035/039/XX
B001/B066

// 2130

AUTHORS: Englin, M. A., Makarov, S. P., Dubov, S. S., Krasnousov,
L. A., and Yakubovich, A. Ya.

TITLE: Fluorination of the Complex of Acetonitrile With Boron Tri-
fluoride

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2371-2374

TEXT: On the basis of Refs. 1-5, the above reaction was carried out with dilute fluorine in a copper reaction vessel at room temperature. NF_3 , CH_3CF_3 , CHF_2CN , and two new products were separated by distillation (one of them boiled at -25 to -24.5°C , the other at -4.8 to -4.7°C) in addition to a considerable quantity of unchanged acetonitrile. The first product, a colorless gas, is completely decomposed by alcoholic alkali lye, does not separate any iodine from alcoholic potassium iodide solution, is easily soluble in organic solvents and difficultly in water. Its elementary composition and molecular weight correspond to the formula $\text{C}_2\text{H}_2\text{NF}_3$. Its structure, which is probably due to the fluorination of acetonitrile, can be possibly represented by

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85613

Fluorination of the Complex of Acetonitrile With Boron Trifluoride S/079/60/030/007/035/039/XX
B001/B066

that the structure suggested for the product is that of α, α, N, N -tetrafluoro ethyl amine. On fluorination of the complex $CH_3CN \cdot BF_3$ with elementary fluorine, 36% of acetonitrile remains unchanged. The yields of the fluorination products referred to the initial acetonitrile are the following: for NF_3 - 6.5%, CH_3CF_3 - 5%, CH_2CF_2NF - 3%, $CH_3CF_2NF_2$ - 2.5%, CHF_2CN - 1%. There are 12 references: 1 Soviet, 7 US, 3 British, 3 German, 1 French, and 1 Belgian.

SUBMITTED: July 1, 1959

Card 3/3

GINSBURG, V.A.; ZELEENIN, G.Ye.; DUBOV, S.S.; MAKAROV, S.P.; YAKUBOVICH,
A.Ya.

Synthesis of esters of thioazocarboxylic acids. Zhur.ob.khim.
30 no.8:2689-2692 Ag '60. (MIRA 13:8)
(Azo compounds) (Acids)

GINSEBURG, V.A.; VASIL'YEVA, M.N.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Reactions of phosphites with azo compounds. Zhur. ob. khim. 30
no.9:2854-2863 S '60. (MIRA 13:9)
(Phosphites) (Azo compounds)

STERLIN, R.N.; DUBOV, S.S.; LI VEY-GAN; VAKHOMCHIK, I.P.; KNUNYANTS, I.L.

Certain regularities in the series of perfluorovinyl derivatives
of the elements of groups IV and V of the periodic table.

Zhur.VKHO 6 no.1:110-111 '61.

(MIRA 14:3)

(Vinyl compounds)

YAKUBOVICH, A.Ya.; SOLOVOVA, O.P.; DUBOV, S.S.; CHELOBOV, F.N.; STEFANOV-
SKAYA, N.N.; OINSEBURG, V.A.

Structure and polymerization of compounds containing a trifluoro-
vinyl group. Zhur. VkhO 6 no.6:709-711 '61. (MIRA 14:12)
(Vinyl compound polymers)

KUTEPOV, D.F.; DUBOV, S.S.

Synthesis and conversions in the diarylurea series. Part 14: Some
problems of the physical state of diarylureas. *Khim. ob. khim.* 30
no.10:3448-3451 0 '61. (MIRA 14:4)
(Urea)

DUBOV, S. S.; GINSBURG, V. A.

Problem of the appearance of the azo group in vibrational and
electron spectra. Zhur. VKHO 7 no.5:583-584 '62.
(MIRA 15:10)

(Azo compounds—Spectra)

DUBOV, S. S.; CHELOBOV, F. N.; STERLIN, R. N.

Mass spectrometric study of some vinyl and perfluorovinyl compounds. Zhur. VKHO 7 no. 5:585 '62. (MIRA 15:10)

(Vinyl compounds—Spectra)

DUBOV, S.S.; TETEL'BAUM, B.I.; STERLIN, R.N.

Nuclear magnetic resonance of some perfluorovinyl derivatives.
Zhur. VKHO 7 no.6:691-692 '62. (MIRA 15:12)
(Vinyl compounds--Spectra)

DUBOV, S.S.; KHOKHLOVA, A.M.; RODIONOVA, N.P.

Mass spectra of some poly- and perfluoro azo and azoxy
compounds, Zhur. VKHO 7 no.6:692 '62. (MIRA 15:12)
(Azo compounds—Spectra)
(Azoxy compounds—Spectra)

TCMILOV, A.P.; SEVAST'YANOVA, I.G.; DUBOV, S.S.

Nature of conjugation in esters of azodicarboxylic acid.
Zhur.ob.khim. 33 no.3:866-867 Mr '63. (MIRA 16:3)
(Formic acid)
(Esters)
(Conjugation (Chemistry))

TOPIC TAGS: ethylene, tetrafluoroethylene, mass spectrometry, Pahl method.

The effect of the ionizing electron energies on the stability of molecular ions based on Pahl's method and upon the strength of C-C bond of ethylene and tetrafluoroethylene. The ionization of ethylene molecule occurs at the C-C

REF: AP3004059

ion with a symmetric charge distribution and an equal effect on the strength of all C-H bonds. Ionization of the tetrafluoroethylene molecule occurs at the C-C

SUBMITTED: 15Jun62

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 000

OTHER: 005

Card 2/2

ABSTRACT: Authors give results of destructive ionization of hexafluoropropylene, which was accomplished on a MS-2 mass spectrometer, having accelerating voltage 100 eV. The results of the experiment are given in the form of mass spectra. The ions originating from ionization of hexafluoropropylene are detected in the mass spectra. The ions are: $C_2F_4^+$ at 12.5 eV; $C_2F_5^+$ at 14.9 eV; $C_3F_7^+$ at 16.1 eV and $C_3F_8^+$ at 18.1 eV. It is difficult to admit that the ions $C_2F_5^+$ were produced by ionization of hexafluoropropylene, because a molecule of hexafluoropropylene has a relatively low molecular weight. The ions $C_3F_7^+$ and $C_3F_8^+$ are produced by ionization of the hexafluoropropylene molecule and migration of the hexafluoropropylene molecule. The ions $C_2F_5^+$ apparently is originated from the hexafluoropropylene molecule.

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GINSBURG, V.A.; DUBOV, S.S.; MEDVEDEV, A.N.; MARTYNOVA, L.L.; TETEL'BAUM, B.I.;
VASIL'YEVA, M.N.; YAKUBOVICH, A.Ya.

Structure of the inclusion complexes of trifluoronitrosomethane with
unsaturated compounds and the mechanism of their formation. Dokl.
AN SSSR 152 no.5:1104-1107 O '63. (MIRA 16:12)

1. Predstavleno akademikom I.L.Knunyantsaia.

KUTEPOV, D.F.; DUBOV, S.S.; STRUKOV, O.G.

Structure of some derivatives of urea and guanidine. Part 1:
Infrared spectra and structure of diureines and diguanyls
of cyclohexanedione and phenanthrene quinone and their N-
chloro derivatives. Zhur. strukt.khim. 5 no. 2:309-313
Mn-ap '64. (MIRA 17:6)

ACCESSION NR: AP4012280

S/0070/64/009/0017/0102/0103

AUTHORS: Gal'perin, Ye. L.; Dubov, S. S.; Volkova, Ye. V.; Mlenik, M. P.

TITLE: The crystalline structure of polytrifluoroethylene

SOURCE: Kristallografiya, v. 9, no. 1, 1964, 102-103

TOPIC TAGS: chloroethylene, crystal structure, x ray diffraction, crystal pulling, polymer, camera RKV 86A

ABSTRACT: The authors undertook this work because of contradictions in the literature on the cell dimensions and chain configuration of this compound. They obtained precisely oriented samples of the polymer by pulling in glycerin at 150-160°. The samples were then heated in their extended state for 10 hours at 190-195°. X-ray patterns were obtained on cylindrical film in an RKV-86A camera. The pictures are characterized by lines of the first and second levels and by an absence of equatorial reflections. The lines of the second level correspond to hexagonal packing. The value of the lattice constant was determined to be $a = 6.385 \pm 0.015 \text{ \AA}$. Along the axis of the crystal fiber, $c = 42 \pm 0.2 \text{ \AA}$. Seventeen monomer units are packed along this line, indicating a crystal density of.

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ACCESSION NR: AP4012280

$2.20 \pm 0.02 \text{ g/cm}^3$, which is in good agreement with experimental density measurements. The absence of equatorial reflections and the presence of intense, almost point, reflections at lines of the first, second, and third layers indicates that the first reflection should be referred to (101), not to (100) as has been done in previous work. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 09Apr63

DATE ACQ: 19Feb64

ENCL: 00

SUB CODE: SS, QC

NO REF SOV: 003

OTHER: 005

Card 2/2

CHELOBOV, F.N.; DUBOV, S.S.; TIKHOMIROV, M.V.; GITEL', P.O.; YAKUBOVICH, A.Ya.

Ionization and dissociation during an electron impact of α -fluoro
nitriles with a growing alkyl chain. Zhur.ob.khim. 34 no.2:571-575
F '64. (MIRA 17:3)

DUBOV, S.S.; KHOKHLOVA, A.M.

Mass spectra and structure of some poly-fluorinated compounds containing
a nitrogen-nitrogen bond. Zhur.ob.khim. 34 no.2:586-589 F '64.
(MIRA 17:3)

DUBOV, S. S.; KHOKHLOVA, A. M.

Mass spectra of some polyfluorinated organic compounds with a
nitrogen-oxygen bond. Zhur. ob. Khim. 34 no.6:1961-1964 Je '64.
(MIRA 17:7)

KUTEPCOV, D.F.; YERMAN, L.Ya.; GOL'DEN, G.A.; GAL'PERIN, Ya.I.; DUBOV, S.S.

Structure of some derivatives of urea and guanidine. X-ray
study of diuretics and diguanyles of cyclohexanediene and
diaryl urea. Zhur. strukt. khim. 5 no.4:646-649 8g '64.
(MIRA 18:3)

GINSBURG, V.A.; MARTYNOVA, L.L.; DUBOV, S.S.; TEHEL'BAUM, B.I.;
YAKUBOVICH, A.Ya.

Structure of adducts of trifluoronitroso methane with unsaturated
compounds. Zhur. ob. khim. 35 no.5:851-857 My '65.

(MIRA 18:6)

ENGLIN, M.A.; YAKUBOVICH, A.Ya.; MAKAROV, S.P.; NIKIFOROVA, T.Ya.;
LYSENKO, V.V.; DUBOV, S.S.

Heterogeneous fluorination with elementary fluorine. Part 7:
Fluorination of hydrochlorides of aliphatic amines. Zhur. ob.
khim. 35 no.7:1167-1171 'Jl '65. (MIRA 18:8)

ENGLIN, M.A.; MAKAROV, S.P.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Heterogeneous fluorination by elementary fluorine. Part 5:
Fluorination of silver and potassium thiocyanates. Zhur. ob.
khim. 35 no.8:1412-1415 Ag '65.

Heterogeneous fluorination by elementary fluorine. Part 6:
Fluorination of cyanuric chloride. Ibid. 1416-1418

(MIRA 18:8)

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; DUBOV, S.S.; MEDVEDEV, A.N.

Synthesis of hexafluorodimethylhydroxylamine and hexafluorodimethylnitrogen oxide. Dokl. AN SSSR 160 no.4:1319-1322 F '66.
(MIRA 18:2)

1. Submitted December 8, 1964.

STROKOV, O.G.; YEMEL'YANOVA, A.D.; DUBOV, S.S.; KOZLOVA, N.V.

Infrared spectra and structure of some secondary amines, derivatives of cyanuric chloride and substituted anilines. Zhur. strukt. khim. 6 no.2:218-226 Mr-Apr '65. (MIRA 18:7)

RANKOV, B.; DUBOV, S.; GAVRIYSKY, V.

Electroretinographic studies of diabetes. Dokl. Bolg. akad. nauk
18 no.7:687-689 '65.

1. Submitted on February 2, 1965.

L 00892-66 ENT(m)/EPF(a)/EWP(j)/EWA(c) RPL MM/MM/PM

ACCESSION NR: AP5020084

UR/0079/65/035,008/1418/1422

546.161:547.122:547.414.7

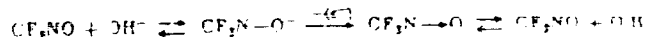
AUTHOR: Ginsburg, V. A.; Medvedev, A. N.; Lebedeva, M. F.; Dubov, S. S.;
Yakubovich, A. Ya.

TITLE: Electron transfer in nitroso-compound reactions. I. Mechanism of tri-
fluoronitrosomethane disproportionation

SOURCE: Zhurnal obshchey khimii, v. 35, no. 8, 1965, 1418-1422

TOPIC TAGS: electron transition, reaction mechanism, EPR spectrum, organic nitroso
compound, aliphatic fluoronitro compound, methane

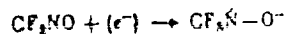
ABSTRACT: The mechanism of trifluoronitrosomethane disproportionation was studied
in various organic and aqueous alkaline solvents in the temperature range from
-100°C to 20°C. A detailed examination of the EPR spectra indicated that in the ab-
sence of a reducing agent, the first stage of trifluoronitrosomethane dispropor-
tionation in alkaline solution ($\text{CF}_3\text{NO} + \text{OH}^- \rightleftharpoons \text{CF}_3\text{N}(\text{OH}) + \text{OH}^-$) is as



OH OH

(1)

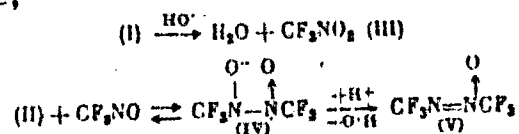
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L 00592-66

ACCESSION NR: AP5020084

In the next stage,



hexafluoroazoxymethane and trifluoronitromethane are formed in a reaction proceeding via the ion-radical mechanism. In the range from -120° to room temperature, the EPR spectra indicate formation of a paramagnetic species at the interphase. Examination of the structure of the EPR spectra at -120°C indicates formation of several types of free radicals. The hydroxy radicals, doublet with identical intensity and a splitting of $\Delta H = 58$ Gc, recombine at -100°C. At 20°C the ratio of intensities of the 6 hyperfine lines is close to 1:4:7:7:4:1 which corresponds to a radical incorporating a group CF_3H . Similarly, 6 hyperfine EPR lines but with-

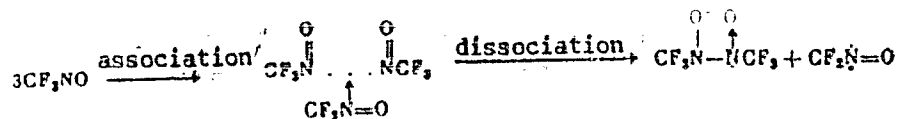
out doublet splitting were found using ethyl ether, chloroform, methyl chloride, and ethyl chloride as solvents. In the $CF_3NO + C_2H_5OH$ system the doublet splitting

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L 00892-66

ACCESSION NR: AP5020084

(ΔH) is equal to 3.3 Oe which is about 1.5 times greater than that found in the systems involving either toluene or hexane. No EPR spectrum corresponding to trifluoronitrosomethane was found using either carbon tetrachloride or trifluoroacetic acid as solvents. The transformation of trifluoronitrosomethane into the dimetric ion-radical (IV) in the absence of a reducing agent involves formation of a π -complex intermediate and proceeds according to the following mechanism



Orig. art. has: 4 figures, 3 formulas.

ASSOCIATION: none

SUBMITTED: 02Sep63

ENCL: 00

SUB CODE: GC, OC

NO REF SOV: 007

OTHER: 004

Card 3/3 *DP*

LIMAR', T.F.; UVAROVA, K.A.; BULACHEVA, A.F.; SGYVUBM, A.S.; BEDNOVA, I.N.; MAKOVSKAYA, E.B.; SOLOMEINA, G.I.; DOLMATOV, Yu.L.; BOBYPENKO, Yu. Ya.; KOGAN, F.I.; KOVALENKO, P.N.; IVANOVA, Z.I.; FOKIN, A.V.; KOMAROV, V.A.; SOROCKIN, I.N.; DAVYLOVA, S.M.; RAVDEL', A.A.; GORELIK, G.N.; DAUKS'AS, V.K. [Dauksas, V.]; PIKUNAYTE, L.A. [Pikunaitė, L.]; SHARIPOV, A.Kh.; SHABALIN, I.I.; STEPNOVA, G.M.; SHMILT, Ya.V.; DUBOV, S.S.; STRUKOV, O.G.

Scientific research papers of the members of the All-Union
Mendeleev Chemical Society (brief information). Zhur. VHKO
10 no.3:350-360 '65. (MIRA 18:8)

1. Donetskii filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta khimicheskikh reaktivov i osobo chistykh khimicheskikh
veshchestv (for Limar', Uvarova, Bulacheva). 2. Ural'skiy nauchno-
issledovatel'skiy khimicheskiiy institut (for Shubin, Bednova,
Makovskaya, Solomeina). 3. Chelyabinskiy filial Gosudarstvennogo
nauchno-issledovatel'skogo i proyektного instituta mineral'nykh
pigmentov (Dolmatov, Bobyrenko). 4. Rostovskiy-na-Donu univer-
sitet (for Kogan, Kovalenko, Ivanova). 5. Leningradskiy tekhnolo-
gicheskiiy institut imeni Lensoveta i Institut mineral'nykh
pigmentov (for Ravdel', Gorelik). 6. Vil'nyuskiy gosudarstvennyy
universitet imeni Kapsukas (for Dauksas, Pikunayte). Nauchno-
issledovatel'skiy institut neftekhimicheskikh proizvodstv (for
Sharipov, Shabalin). 8. Tomskiy politekhnicheskiiy institut
imeni Kirova (for Stepnova, Shmidt).

ACC NR: AP6012923

SOURCE CODE: UR/0020/66/167/005/1083/1086

AUTHOR: Ginsburg, V. A.; Medvedev, A. N.; Dubov, S. S.; Lebedeva, M. F.

ORG: none

TITLE: Electron transfer in reactions of nitroso compounds

SOURCE: AN SSSR. Doklady, v. 167, no. 5, 1966, 1083-1086

TOPIC TAGS: organic nitroso compound, free radical, EPR spectrum, electron donor

ABSTRACT: In a continuation of the study of electron transfer processes in donor-acceptor transformations of nitroso compounds, the following systems consisting of trifluoronitrosomethane and typical nucleophilic compounds were analyzed: (A) $\text{CF}_3\text{NO} + \text{amines}$ $\parallel \checkmark$ ($(\text{C}_2\text{H}_5)_3\text{N}$; $\text{C}_5\text{H}_5\text{N}$; $\text{C}_6\text{H}_5\text{NH}_2$; $\text{C}_6\text{H}_5\text{NHCH}_3$; $\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2$); (B) $\text{CF}_3\text{NO} + \text{C}_6\text{H}_5\text{SH}$; (C) $\text{CF}_3\text{NO} + (\text{iso-C}_4\text{H}_9\text{O})_3\text{P}$; (D) $\text{CF}_3\text{NO} + \text{RNNO}$; $\text{R} = ((\text{CH}_3)_2, (\text{C}_2\text{H}_5)_2)$; (E) $\text{CF}_3\text{NO} + (\text{CH}_3)_2\text{CClNO}$, and also (F) $\text{CF}_3\text{NO} + \text{C}_2\text{H}_5\text{ONO}$; (G) $\text{CF}_3\text{NO} + \text{aldehydes}$ (CH_3CHO , $\text{C}_3\text{H}_7\text{CHO}$, $\text{C}_6\text{H}_5\text{CHO}$). In these systems, in the temperature range from -160 to +20C, EPR spectra were obtained, indicating a radical nature of the transformations taking place. The signals are attributed to ion radicals of the type $\text{CF}_3\text{N}-\overset{0}{\text{D}}$ (where D is the donor molecule) and CF_3NO^- , and also to

products of secondary reactions. The formation of these ion radicals in systems A-F indicates that oxidation-reduction processes occur during the initial stages of the reaction between the nitroso compound and the nucleophilic molecule, the latter acting as the electron donor. The

Card 1/2

UDC: 543.878

L 34091-66

ACC NR: AP6012923

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paper was presented by Academician Voyevodskiy, V.V., 26 Jul 65. Orig. art. has: 2 figures.

SUB CODE: 07 / SUBM DATE: 02Jun65 / ORIG REF: 007

Card 2/2 vmb

L 32643-66 EWT(m)/EWP(j)/T WW/JW/RM

ACC NR: AP6015613 (A)

SOURCE CODE: UR/0020/66/168/002/0344/0347

AUTHORS: Makarov, S. P.; Englin, M. A.; Videvko, A. F.; Tobolin, V. A.; Dubov, S. S.

ORG: none

TITLE: Reactions of hexafluorodimethylnitroxide¹

SOURCE: AN SSSR. Doklady, v. 168, no. 2, 1966, 344-347

TOPIC TAGS: chemical reaction, halogen oxygen nitrogen compound, fluorinated organic compound

ABSTRACT: Reactions of hexafluorodimethylnitroxide (I), which was described in an earlier paper by S. P. Makarov, A. Ya. Yakubovitch i dr. (Zhurn. Vsesoyuzn. khim. obshch. im. D. I. Mendeleeva, no. 1, 106, 1965; DAN, 160, 1319, 1965), with ethylene, tetrafluoroethylene, acetylene, benzene, tetrafluorohydrazine, phosphorus trichloride and trifluoride, lead and tin are described. Photolysis and pyrolysis of I were also investigated. The structure of the reaction products was analyzed by means of elementary analysis, mass spectroscopy, determination of molecular weight, and by formation of derivatives. It was established that in some reactions I acts as a typical free radical while in others as an oxidizing agent releasing its oxygen. Photolysis leads to dimerization of I, while pyrolysis at 350C results in

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L 32643-66

ACC NR: AP6015613

decomposition (I is stable at temperatures up to 200C). The authors express their
gratitude to F. N. Chelobov and A. M. Khokhlov for mass spectrophotometric study of
some compounds. This paper was presented by Academician I. L. Knunyants on 29
September 1965. Orig. art. has: 1 table and 1/ equations. 2

SUB CODE: 07/

SUBM DATE: 24Sep65/

ORIG REF: 003/ OTH REF: 001

Card 2/2

#

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"Sorry about that...."
(Get Smart)

the

End